

What is claimed is:

1. A method for jumping tracks on a double-layer optical disk from a first address A on a first data layer to a target address D on a second data layer, comprising:
 - 5 a. reading the first address A where the optical head is currently positioned;
 - b. jumping to the second data layer;
 - c. reading a relative second address B on the second data layer that corresponds to the first address A on the first data layer; and
 - 10 d. if the second address B on the second data layer is smaller than the first address A on the first data layer, then:
 - d1. obtaining a third address C which is equal to the first address A minus the second address B;
 - d2. designating the first address A as the address where the optical
 - 15 head is positioned, and obtaining a new target address $D + C$ on the second data layer;
 - d3. performing a calculation function based on the first address A and the new target address; and
 - d4. moving the optical head to the new target address on the second
 - 20 data layer.
2. The method of claim 1, wherein step d3 includes:
calculating the number of tracks that the optical head needs to be moved; and
determining the movement direction of the optical head.
- 25 3. The method of claim 1, wherein the address shift includes:
adding the first address A to the target address D and then subtracting the second address B to obtain the new target address.

4. A method for jumping tracks on a double-layer optical disk from a first address A on a first data layer to a target address D on a second data layer, comprising:

- 5 a. reading the first address A where the optical head is currently positioned;
- b. jumping to the second data layer;
- c. reading a relative second address B on the second data layer that corresponds to the first address A on the first data layer; and
- 10 d. if the second address B on the second data layer is larger than the first address A on the first data layer, then:
 - d1. designating the second address B as the address where the optical head is positioned;
 - d2. performing a calculation function based on the second address B and the target address D; and
 - 15 d3. moving the optical head to the target address D on the second data layer.

5. The method of claim 4, wherein step d2 includes:
- calculating the number of tracks that the optical head needs to be moved; and
 - 20 determining the movement direction of the optical head.

6. A method for jumping tracks on a double-layer optical disk from a first address A on a first data layer to a target address D on a second data layer, comprising:

- 5 a. reading the first address A where the optical head is currently positioned;
- b. jumping to the second data layer;
- c. reading a relative second address B on the second data layer that corresponds to the first address A on the first data layer; and
- 10 d. if the second address B on the second data layer is smaller than the first address A on the first data layer, then:
 - d1. obtaining a third address C which is equal to the first address A minus the second address B;
 - d2. designating the first address A as the address where the optical head is positioned, and obtaining a new target address $D + C$ on the second data layer;
 - 15 d3. performing a calculation function based on the first address A and the new target address; and
 - d4. moving the optical head to the new target address on the second data layer; and
- 20 e. if the second address B on the second data layer is larger than the first address A on the first data layer, then:
 - e1. designating the second address B as the address where the optical head is positioned;
 - e2. performing a calculation function based on the second address B and the target address D; and
 - 25 e3. moving the optical head to the target address D on the second data layer.

7. A method for jumping tracks on a double-layer optical disk from a first address A on a first data layer to a target address D on a second data layer, comprising:

- 5 a. reading the first address A where the optical head is currently positioned;
- b. jumping to the second data layer;
- c. reading a relative second address B on the second data layer that corresponds to the first address A on the first data layer;
- 10 d. if the second address B on the second data layer is smaller than the first address A on the first data layer, then shifting the address of the second address B on the second data layer and obtaining a new target address on the second data layer based on this address shift;
- e. performing a calculation function based on the first address A and the new target address; and
- 15 f. moving the optical head to the new target address on the second data layer.

8. A method for jumping tracks on a double-layer optical disk from a first address A on a first data layer to a target address D on a second data layer, comprising:

- 20 a. reading the first address A where the optical head is currently positioned;
- b. jumping to the second data layer;
- c. reading a relative second address B on the second data layer that
- 25 corresponds to the first address A on the first data layer;
- d. if the second address B on the second data layer is larger than the first address A on the first data layer, then performing a calculation function based on the second address B and the target address D, and moving the optical head to the target address D on the second data layer.